

Work Order ID 58500

May 7, 2010 2:25:33 PM

Page 1

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 07/05/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 24/05/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:



Date: 10-5-07 Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr	Revision Nbr
D2580	Rev D

100

0.00



DOCUMENT CONTROL

DC

0.00

Document Control

Memo

Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG002

110

0.00



BENDING MACHINE - SKIDTUBES

CNC Bend 1

0.00

CNC Delta 100 Bender

Memo

1-Bend as per program D2580.C on CNC Bender and Folio FT009

2-Cut tubes as per Dwg. D2580

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
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Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

120

Operation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Skidtubes

Memo

0.00

Skidtubes

1- Deburr ends

2- C'sink holes as per dwg without cutting fluid

3- Prepare tube for welding, remove alodine as required.

4- Scribe batch number insied aft end of tube.

M/05/13

130



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

(i)

BE 10/05/14

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Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

140



Skidtubes

Operation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

0.00

Memo

0.00

1-Weld step D2576 as per Dwg. D2580 and QSI 004
A/R□□□ Aluminum Rod

M112860

BE 10/05/14

2-Prep per QSI 005 and weld crossbolt spacers D2579 as per Dwg. D2580, QSI 004.

For D2579 spacers, weld one side, pass 3/8" drill, weld other side, pass 3/8" drill
A/R□□□ Aluminum Rod

M112860

BE 10/05/14

3-Grind welds as per Dwg D2580 Grind flush ridge made from bending

4-Drill holes for wearplates using DT 8217 & DT8937 Open holes to 19/64",
adjust stopper not to hit web. Deburr

) M05/17

5-Counterbore crossbolt spacers to 7/16" ID x 1.0" deep as per Dwg D2580.
Deburr holes

M 10/05/18

6-Drill pilot holes for aft cap using DT 8215Open holes to 0.208". Deburr

M 05/17

7-Drill pilot holes for Tow ring using DT8091, open to .640"and Deburr

M 10/05/18

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Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
Description

150

QC10- Inspect visual per QSI004- ground welds



QC

Quality Control

Set Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

0.00

Solutions

0.00

160

QC5- Inspect part completeness to step on W/O

0.00



QC

Quality Control

0.00

Solutions

fco

170

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

(1)

BR 10-5-19

W/O:		WORK ORDER CHANGES					
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Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

180



Powdercoat

Operation
Description

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

18114207

Set Up/
Run Hours

0.00

Draw
Number

Rev.

Draw
Plan

Code

Accept
QtyReject
QtyReject
NumberInsp.
Stamp

Powder Coating

Memo

0.00

→ 10105/19

X1

0

190



QC

QC3- Inspect Part Finish

0.00

① BK 10-5-20

Quality Control

Memo

0.00

W/O:		WORK ORDER CHANGES					
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Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

200



HandFinish

Hand Finishing

Operation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

0.00

Memo

0.00

1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates

A/R Sikaflex-291

Sikaflex expire date:

M112429

10/08

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive

A/R Sikaflex-291

Sikaflex expire date:

M112429

10/08

5-Wing Walk as per Dwg D2580 and QSI 005 4.4

Batch: *M112429*

D Bk 10-5-21

W/O:		WORK ORDER CHANGES					
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Customer:

Reference:

Approvals:

Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center ID

210



QC

Quality Control

Operation
Description

QC5- Inspect part completeness to step on W/O

Set Up/
Run Hours

0.00

Draw
Number

Rev.

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

S 05/25

220



Packaging

Packaging

Packaging

0.00

0.00

230



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

Identify and pack for shipping as per PPPD205-634-041
Location: PA
PPP Rev: 58221

 10/06/01 AD
 MR
 10-5-31

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ

Start Qty: 1.00

IPP Rev P 10.02.19 per PAR09-043 EC verified by:DD

Required Qty: 1.00

IPP Rev. O 06.02.28 Added paperwork EC

IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM

D2580-1

Manufactured No

110

Each

9.0000

1



205 Skidtube bent detail

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG	9	
57028	1	
57347	1	
57902	1	
57938	2	
58090	2	
58112	2	

BS8384 1 10/5/13

D2576-3

Manufactured No

140

Each

110.0000

1



Step (machining detail)

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG	110	
46661	62	
52215	48	

1 10/5/14

D2579

Manufactured No

140

Each

193.0000

20



Crossbolt Spacer

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG	193	
57052	13	
57348	180	

20 10/5/14

W/O:		WORK ORDER CHANGES					
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IPP Rev P 10.02.19 per PAR09-043 EC verified by:DD

IPP Rev. O 06.02.28 Added paperwork EC

IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM

Required Qty: 1.00

D2855



Manufactured No

200

Each

105.0000

1



Cap

Location	Loc Qty	Loc Code
FP6	2	
56613	2	
ST026	103	
50513	1	
50770	29	
51539	19	
53791	54	

1 Bl 10-5-21

AN3-5A



Purchased No

200

Each

963.0000

2



Bolt

Location	Loc Qty	Loc Code
ST350	963	
105057	963	

2 Bl 10-5-21

AN960JD10L



Purchased No

200

Each

4,297.000

2



Washer

Location	Loc Qty	Loc Code
ST348	4297	
110985	4297	

2 Bl 10-5-21

ALS7-1032-130



Purchased No

200

Each

17.0000

50



Insert

ALS4-1032-130

Location	Loc Qty	Loc Code
ST282	17	
113238	17	

50 Bl 10-5-21

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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IPP Rev. O 06.02.28 Added paperwork EC

IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM

Required Qty: 1.00

AN3C4A



Purchased No

200

Each

1,939.000

50



BOLT

	<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
	ST350	1939	
	114103	501	
	114108	300	
	114416	138	
	114523✓	1000	

50 BL 10-5-21

AN960C10L



Purchased No

200

Each

0.0000

50



Manufactured No

114341

50 BL 10-5-21

washer

D3566-13



Gasket

	<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
	FP	33	
	53461✓	33	

1 BL 10-5-21

D3566-5



Manufactured No

200

Each

21.0000

1



Gasket

	<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
	FP015	21	
	57526✓	1	
	57682✓	20	

1 BL 10-5-21

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IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM

D3566-1



Manufactured No

200

Each

41.0000

2

Gasket

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP015	41	
57715 ✓	20	
58182	21	

2 BK 10-5-21

D3564-11



Manufactured No

200

Each

9.0000

1

Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP019	9	
57957 ✓	9	

1 BK 10-5-21

D3564-13



Manufactured No

200

Each

27.0000

1

Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP17	27	
56533	1	
57684 ✓	12	
57922	14	

1 BK 10-5-21

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Required Qty: 1.00

IPP Rev. O 06.02.28 Added paperwork EC

IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM

D3564-9



Manufactured No

200

Each

22.0000

1



Wearshoe

	<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
	FP	1	
	55334	1	
	FP019	21	
	57685 ✓	7	
	57958	14	

1 Bl 10-5-21

D3564-5



Manufactured No

200

Each

7.0000

1



Wearshoe

	<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
	FG	58709	
		34806	
	FP19	6	
	57525	1	
	57729	5	

1 Bl 10-5-21

D2594-3



Manufactured No

200

Each

407.0000

16



O-Ring, 205 Skidtube

	<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
	FP	407	
	55546 ✓	19	
	58191 ✓	388	

16 Bl 10-5-21

W/O:		WORK ORDER CHANGES					
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IPP Rev. O 06.02.28 Added paperwork EC

IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM

D2594-1



Manufactured No

200

Each

382.0000

16



Plug, 205 Skidtube

Location	Loc Qty	Loc Code
FP	382	
42807	112	
55002	128	
57826	142	

58434

16 BK 10-5-21

W/O:		WORK ORDER CHANGES					
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DART

DESIGN <i>#</i>	DRAWN BY <i>PH</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>#</i>	APPROVED <i>#</i>	DRAWING NO. D2580	REV. D SHEET 1 OF 3
DATE 07.02.27		TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	
D	07.02.27	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183	

RELEASED
07-06-28 #

QTY -041	QTY -045	Part Number	Description
X		D2580-041	SKIDTUBE ASSEMBLY
	X	D2580-045	SKIDTUBE ASSEMBLY
1	1	D2500-1-190	EXTRUSION
1	1	D2576-3	STEP
20	24	D2579	CROSS BOLT SPACER
16	16	D2594-1	PLUG
16	16	D2594-3	O-RING
1	1	D2596	205 WEB
1	1	D2855	AFT CAP
1	1	D3564-5	WEARSHOE
1	1	D3564-9	WEARSHOE
1	1	D3564-11	WEARSHOE
1	1	D3564-13	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
1	1	D3566-13	GASKET
50	50	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AEELS-1032-130	INSERT
50	50	AN3C4A	BOLT
2	2	AN3-5A	BOLT
50	50	AN960C10L	WASHER
2	2	AN960JD10L	WASHER

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WITHOUT NOTICE
WORK ORDER
NO. 58500

58500-50

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/-291.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:
SEE NOTES ON
PAGE 2 FOR D2580-041 AND
PAGE 3 FOR D2580-045
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

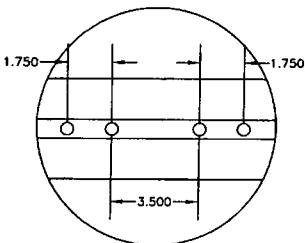
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

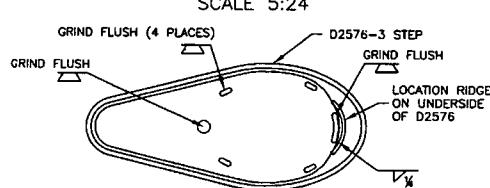
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DETAIL A
SCALE 5:24

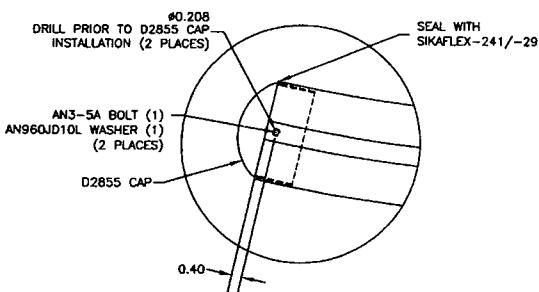


DETAIL B
SCALE 5:24

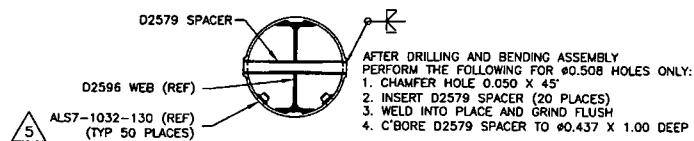


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DETAIL C
SCALE 5:24



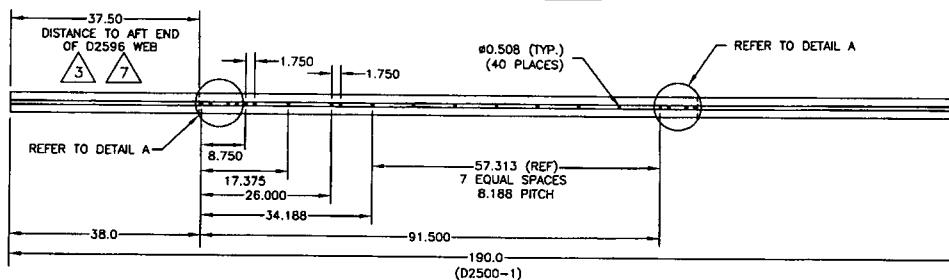
SECTION D-D
SCALE 5:24



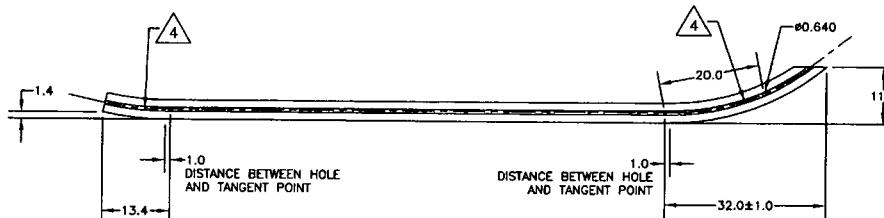
D2580-041 NOTES

- i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY GLOSS WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

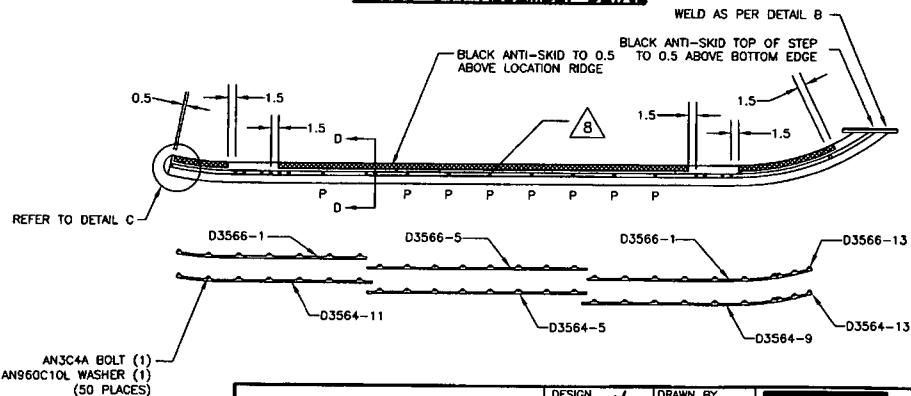
D2580-1 DRILLING DETAIL



D2580-1 BENDING AND CUTTING DETAIL



D2580-041 ASSEMBLY DETAIL



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				D2580	SHEET 2 OF 3
DATE				TITLE	SCALE
07.02.27				205 SKIDTUBE ASSEMBLY	1:24

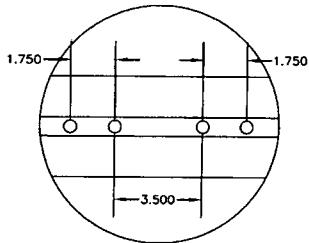
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

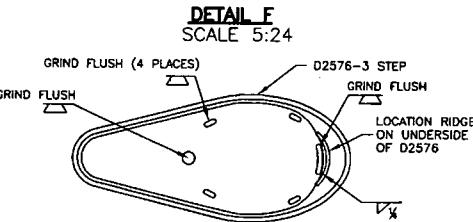
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

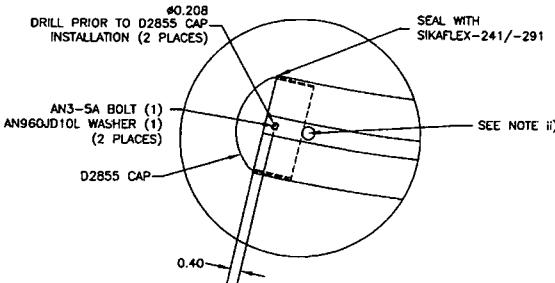
DETAIL E
SCALE 5:24



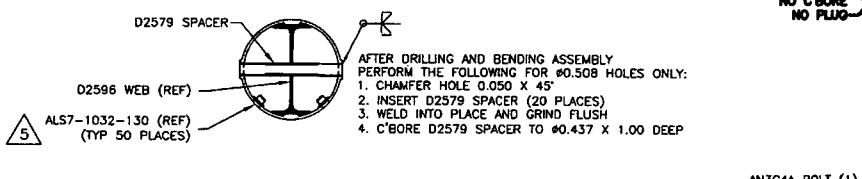
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07 Dec 28



DETAIL G
SCALE 5:24



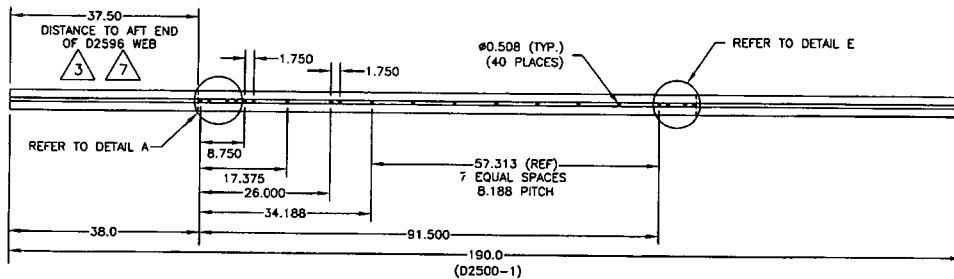
SECTION H-H
SCALE 5:24



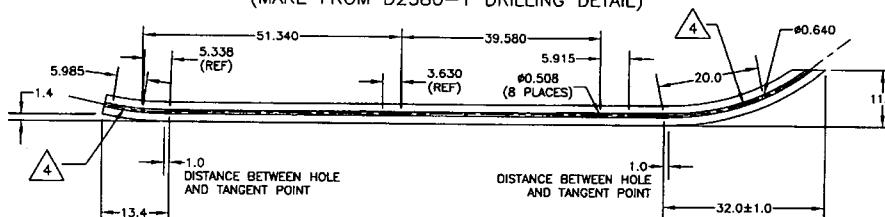
D2580-045 NOTES

- i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ENTIRE ASSEMBLY GREEN (REF. 4.3.5.8) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- ii) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE
WITH THE SPACER AT THIS LOCATION

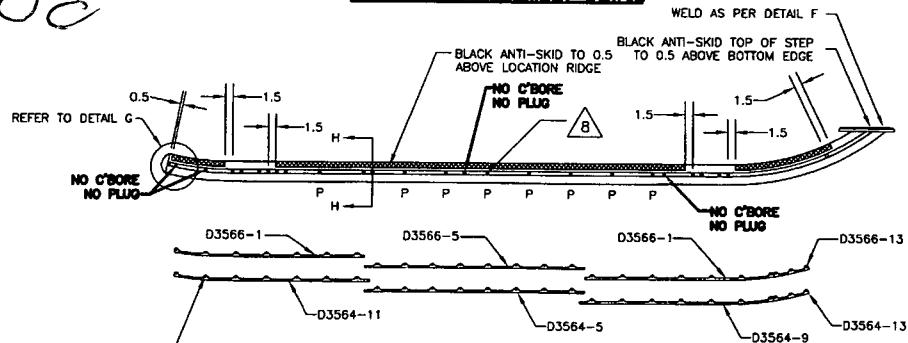
D2580-1 DRILLING DETAIL



D2580-5 BENDING AND CUTTING DETAIL
(MAKE FROM D2580-1 DRILLING DETAIL)



D2580-045 ASSEMBLY DETAIL



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CHECKED <i>[initials]</i>	APPROVED <i>[initials]</i>	DRAWING NO. D2580	SHEET 3 OF 3
DATE 07.02.27	TITLE 205 SKIDTUBE ASSEMBLY	SCALE 1:24	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 232

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 58508
Part number: D 205 634 041
Description: .205 tube
Welding Process: Tig[] Mig[]
Base materiel: Aluminium
Current: AC[] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[] fail[]
Penetration: pass[] fail[]

UNACCEPTABLE

Cracks: pass[] fail[]
Undercut: pass[] fail[]
Pin holes: pass[] fail[]
Overlap (cold lap) pass[] fail[]
Porosity (surface): pass[] fail[]
Coloration: pass[] fail[]

Qualifier R. P. Jones Date of Test Coupon 10.05.15

Welder Barclay Elliott Date of Test Coupon 10.05.18

The above named individual is qualified in accordance with AWS D17.1.2001 to weld